Advance Planning Briefing for Industry

EDGEWOOD CHEMICAL BIOLOGICAL CENTER

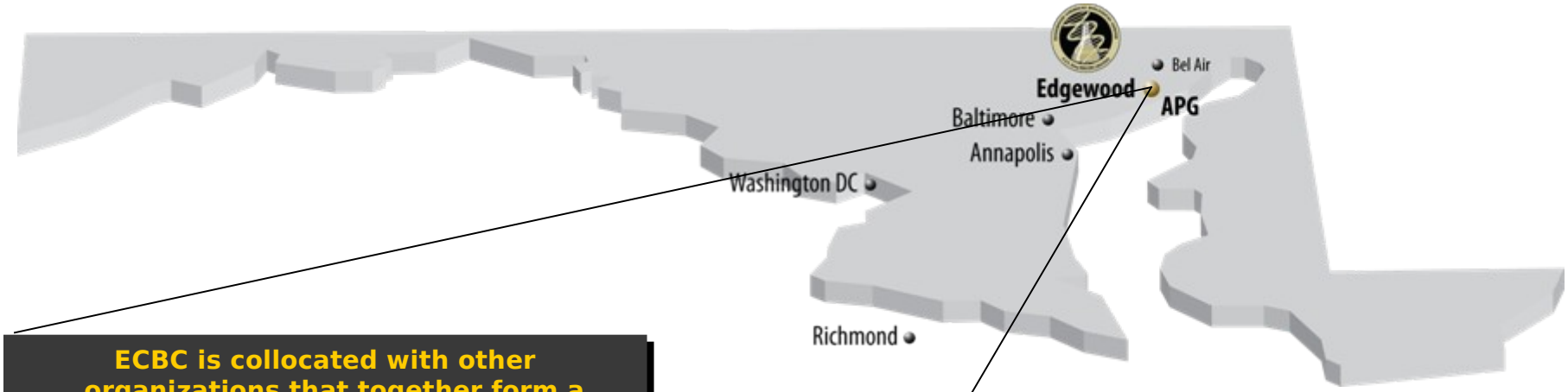
TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Mr. Rick Decker

Technical Director, Edgewood Chemical Biological Center

10 OCT 2008

Edgewood Area
Aberdeen Proving Ground



ECBC is collocated with other organizations that together form a consolidated chemical biological defense community

- **ECBC** – Edgewood Chemical Biological Center
- **MRICD** – Medical Research Institute of Chemical Defense
- **JPM for BD** - Biological Defense
- **JPM for NBC CA** - Nuclear, Biological and Chemical Contamination Avoidance
- **CHPPM** -- Center for Health Promotion and Preventive Medicine
- **CMA** - Chemical Materials Agency
- **ACWA** - Assembled Chemical Weapons Alternatives
- **20th Support Command** – Chemical, Biological, Radiological, Nuclear, High Yield Explosives
- **AML** – 1st Army Medical Lab
- **AML** – 9th Army Medical Lab

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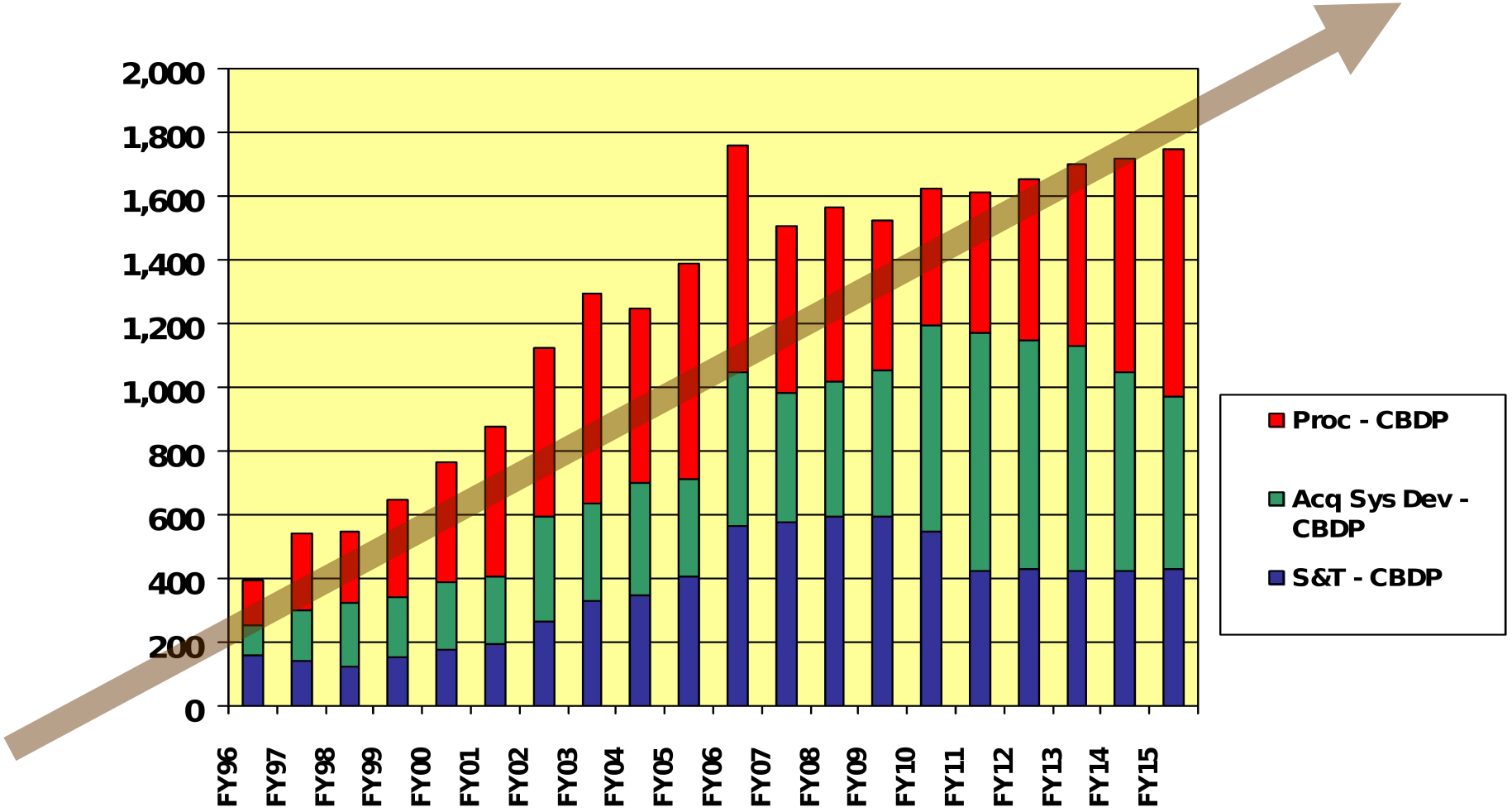
DoD Chem-Bio Defense Funding



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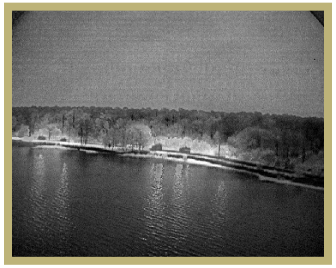
RDECOM Mission

Strike (Exploit FCS Netted Fires)

Human Performance & Embedded Training



Sensory Enhancement

MISSION: Develop, integrate, and sustain decisive technology-enabled capabilities to ensure the dominance of our Warfighters

- Technology Out of the Laboratories and into the Hands of Warfighters in the Shortest Time
- Develop Materials and Technologies for the Future
- Provide Technology Solutions to Operational Needs
- Systems Engineering, Assessment, and Analysis
- Engineering Support to Development and Sustainment

8,500 Engineers & Scientists

Annual Budget ~ $5B

Over 300 International Agreements

Robotics Interface

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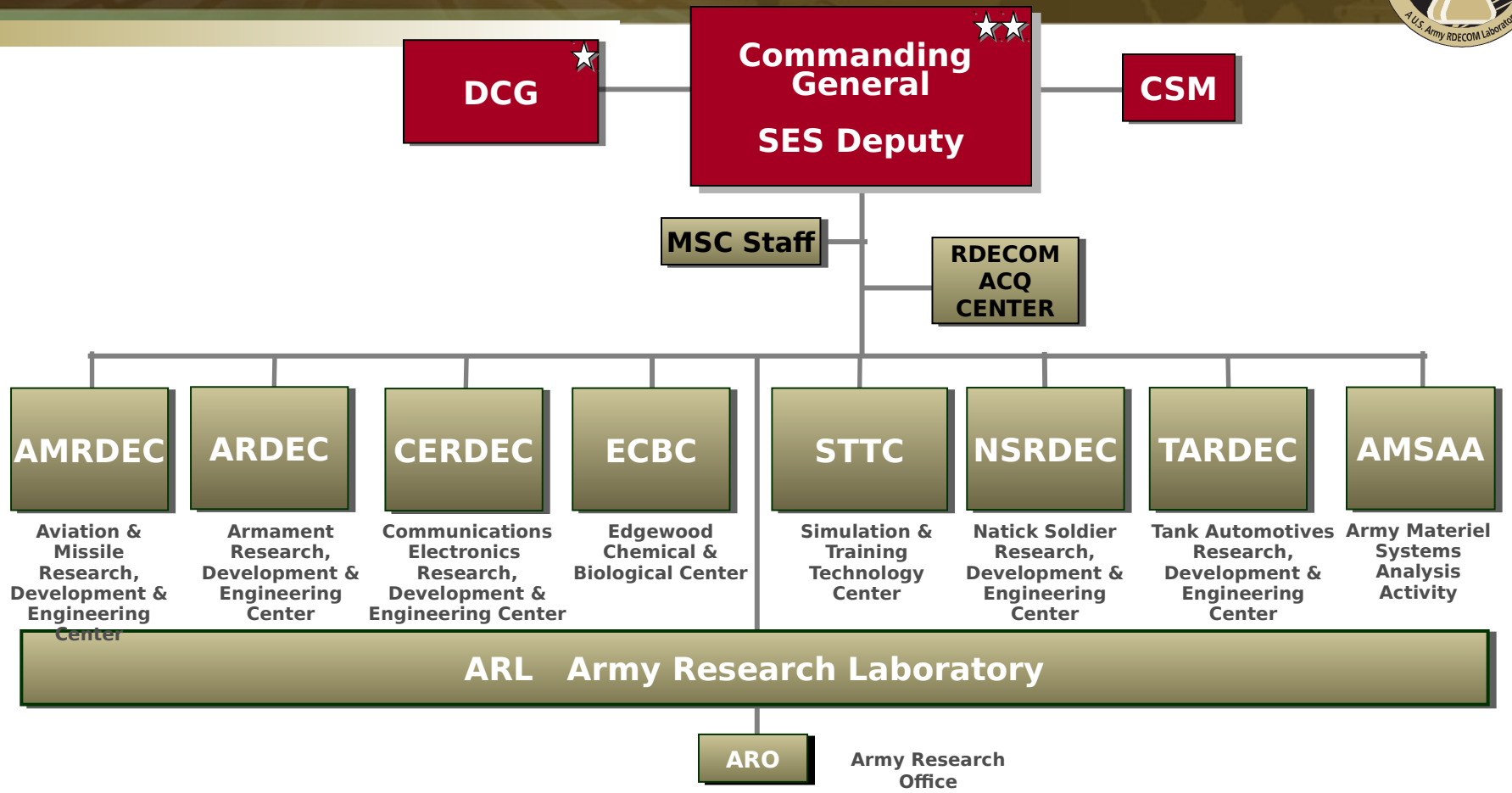
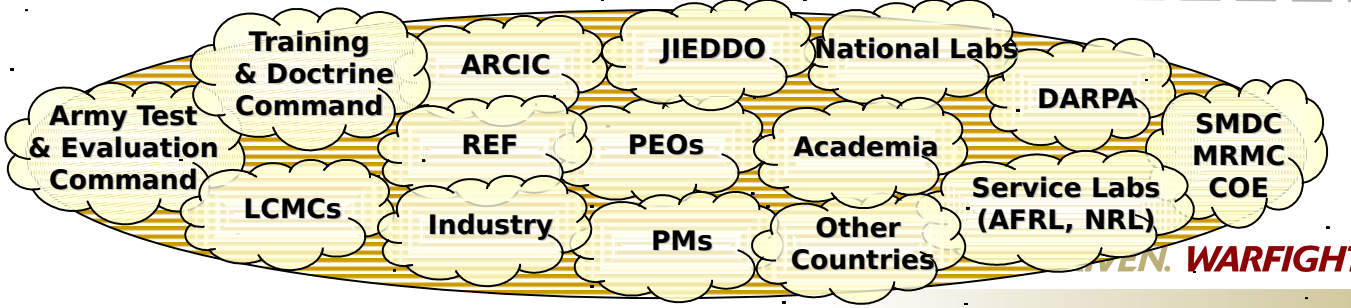
Organization



Partners



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ECBC Today

Edgewood Chemical Biological Center is the primary DoD technical organization for non-medical chemical and biological defense

Mission

Provide integrated science, technology and engineering solutions to address chemical and biological vulnerabilities

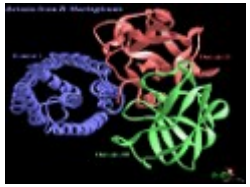
Vision

The premier national resource for chemical and biological solutions

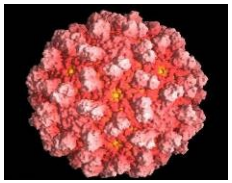
Core Competence

Working *safely* with chemical and biological agents at all stages of the materiel lifecycle

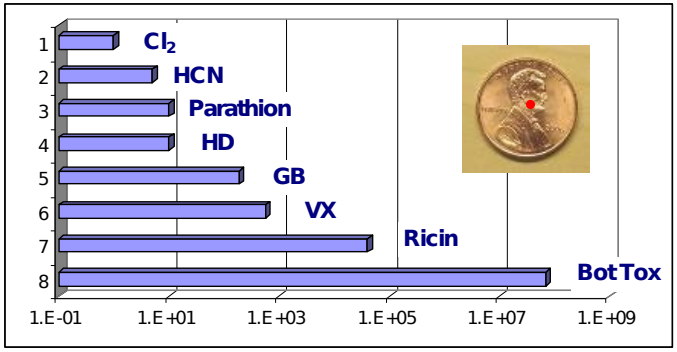
Bacteria



Toxins



Viruses



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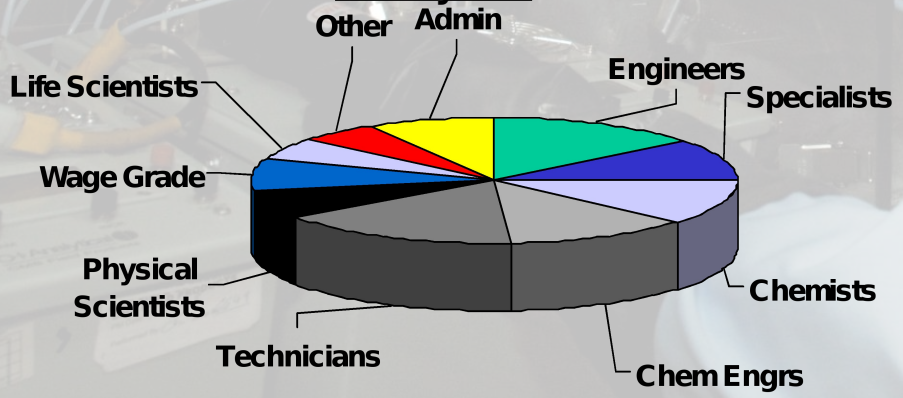
ECBC People

The leading hands-on CB defense experts

- **1,720 Total Manpower***
  - **1,174 government employees**
  - **3 military personnel**
  - **543 on-site contractors**
- **Staff in Personnel Reliability Program (PRP)**
  - **284 staff in chemical PRP**
  - **96 staff in biological PRP**

Expertise across entire lifecycle



*August 2008

Support Entire Lifecycle

R&T	Engineering	Operations

Warfighter Needs

Warfighter

Recent Contributions

- TGE[illegible]

- Buffalo

- Albania Demil

- Explosives Signature Anal[illegible] Stud[illegible]

- Mobile Labs

- Ground [illegible]onn[illegible]

- Korean Army CBRNE trai[illegible]

- [illegible]t Fate R[illegible]rch

- Non-stock[illegible] mitigation

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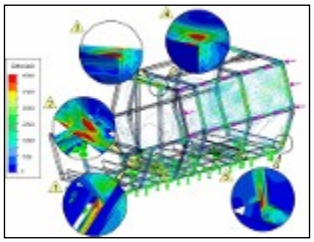
RDECOM's Product Integration Facility (PIF) Capabilities

Rapid Technologies



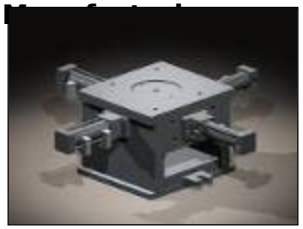
Engineering Modeling & Simulation

Precision Machine

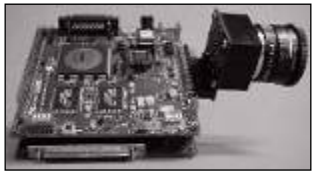
Metal Fabrication

- Product Integration Facility (PIF) Definition: A combination of flexible design and fabrication capabilities that can be used to address urgent needs or accelerated programs by rapidly developing custom products anytime within the acquisition life cycle.
- Seven RDECOM Elements have a quick-reaction prototype capability.
- PIFs are a critical part of integrated rapid acquisition at each site in accordance with OSD Policy and RDECOM Vision/Mission.

Design for



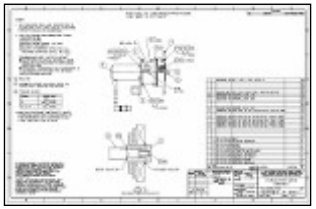
Patterns & Plastics



Computer and Electronics

Engineering Design &

TDP Development



Conceptual Modeling & Animation

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Full Spectrum Collaboration

INDUSTRY

Partnerships with industry large and small enables access to cutting-edge science in the private sector

- 15 new Cooperative Research and Development Agreements (CRADAs) in FY06; total over 88 active agreements
- 58 New Test Service Agreements in FY06

Chesapeake PERL adds another win

Biotech/Life Science

Chesapeake PERL Inc.

STERIS

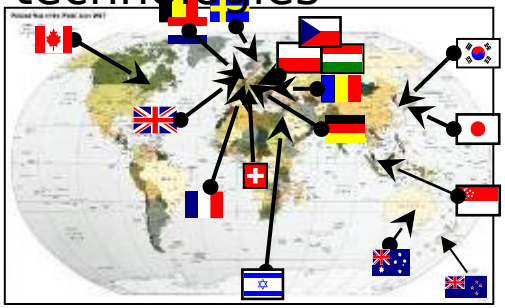
Collaborated on development of modified Vaporous Hydrogen Peroxide (mVHP)

Genencor International®

Licensed ECBC enzyme technology

INTERNATIONAL

- Collaboration with international S&T community to leverage advances in CB technologies
- Awareness of current CB technology throughout the world



ACADEMIA

Special partnerships:

- Institute of Soldier Nanotechnology, (ISN)
- Institute for Collaborative Biotechnology (ICB)
- Texas Consortium

DOE LABS

- **Oak Ridge:** Future CB Detection System of Systems Strategy
- **Los Alamos:** Waterloop technology evaluations
- **Pacific Northwest:** Advice on potential CB technology applications
- **Lawrence Livermore:** Evaluation of aerosol collection device used for ABPDS
- **Sandia:** Design of Explosive Destruction System (EDS)

TEXAS ENGINEERING EXPERIMENT STATION
THE ENGINEERING AGENCY OF THE STATE OF TEXAS

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ECBC Technology Needs

- Rapid sample preparation for point biological detection
  - A clean, concentrated sample is the first, and possibly most important step in achieving fast and accurate detection of biological materials
  - Today's tedious, manual process is difficult for non-technical military personnel to perform in the field
- Standoff detection technologies, to include airborne and surface signatures for CW and explosives
  - More important than ever to detect a threat from a distance to ensure safety of troops
  - Much progress in last few years in areas of biological detection from standoff distances
  - Explosives detection an extension of our forensic and analytical methodology competencies
- Non-aggressive decontamination technologies for sensitive equipment
  - Need capability of destroying the agent without damaging nearby computer systems, electronics, sophisticated equipment
  - Interested in new materials approaches as well as different application technologies
  - Building capability into existing materiel so no additional logistical burden highly desirable
- High performance, low risk obscurants covering visible, IR, and microwave frequencies
  - Enemy sensor and seeking technology is improving so obscurant progress is essential. Need to move toward bi-spectral obscurants
  - High yield and high extinction coefficient: two most critical performance measures
  - New technologies must balance high performance with low impact on human health and environment
- New adsorbents for toxic industrial chemicals
  - Expand capability to address more threats without increasing size of filter or adding bulk
  - Interested in technologies that may not involve adsorbents

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